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Self-criticism as a mediator in the relationship between unhealthy perfectionism and distress.

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Abstract

Unhealthy or negative perfectionism has been identified as both a risk and maintaining factor for a range of psychological difficulties. A cross-sectional online study with a predominantly student population ($n = 381$) investigated cognitive processes suggested to mediate the relationship between unhealthy perfectionism and distress. Hypothesised cognitive processes were assessed using questionnaires about rumination, habitual self-critical thinking, unhelpful beliefs about emotions, self-compassion and mindfulness. Factor analysis of these questionnaires suggested two distinct underlying constructs, labelled self-criticism and present-moment awareness. Higher levels of self-criticism were associated with unhealthy perfectionism and psychological distress, and partially mediated this relationship. Present-moment awareness was associated with unhealthy perfectionism but not distress. These findings are consistent with the possibility that repetitive or habitual self-critical thinking is a process through which unhealthy perfectionism may result in greater distress. Future research could investigate whether interventions targeting self-criticism may help to reduce distress in individuals with high levels of unhealthy perfectionism.

Keywords: Perfectionism, self-criticism, depression, anxiety, stress

1. Introduction

The construct of perfectionism is one that is still debated, with some conceptualisations emphasising its multidimensional nature (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Multidimensional definitions often highlight adaptive and maladaptive aspects. For example, 'perfectionistic striving', characterised by setting and striving for high standards, is often viewed as adaptive, healthy or positive, whereas 'perfectionistic concern' including self-criticism, fear of failure and negative evaluation by self or others is frequently viewed as the unhealthy or negative side of perfectionism (Stoeber & Otto, 2006). Bearing similarities to 'unhealthy' or 'negative' perfectionism, 'clinical perfectionism' has been defined as the overdependence of self-worth on the pursuit and achievement of personally demanding, self-imposed standards, despite adverse consequences (Shafran, Cooper & Fairburn, 2002). Perfectionism has been conceptualised as a transdiagnostic risk and maintaining factor for a range of psychological problems such as eating disorders and depression (Egan, Wade, & Shafran, 2011). Given the association between unhealthy perfectionism and psychological distress, further research aiming to understand both the risk and protective processes underlying this relationship is required.

1.1 Cognitive processes which may mediate the relationship between perfectionism and distress

Self-criticism is a process consistently emphasised in models of perfectionism (Blatt, 1995; Hewitt & Flett, 1991). Previous research has found evidence consistent with the suggestion that the relationship between perfectionism and depression, anxiety and eating disorder symptomatology is accounted for by self-criticism (Dunkley, Blankstein, Masheb, & Grilo, 2006). However, self-critical thinking has often been measured as a facet of a depression scale (Depressive Experiences Questionnaire; Blatt, D'Afflitti, & Quinlan, 1976) which may thus be influenced by mood. In the present study we operationalized self-criticism in the form of three constructs; a general tendency to ruminate; beliefs about the unacceptability of

experiencing or expressing negative thoughts and emotions; and habitual critical self-thinking.

A growing evidence base suggests a strong association between rumination and unhealthy perfectionism, with perfectionist individuals reporting higher levels of rumination than others (O'Connor, O'Connor, & Marshall, 2007). Furthermore, evidence has suggested that the tendency to ruminate, in particular a brooding ruminative response style, mediates the relationship between maladaptive perfectionism and depressive symptoms (Di Schiena, Luminet, Philippot, & Douilliez, 2012) and social anxiety (Nepon, Flett, Hewitt, & Molnar, 2011). Short and Mazmanian (2013) found that rumination mediated the relationship between socially prescribed perfectionism and negative affect in university students.

Another form of negative self-focused cognition that has been found to be associated with unhealthy perfectionism is the belief that experiencing or expressing negative thoughts and emotions is unacceptable and will lead to negative evaluation by others (Rimes & Chalder, 2010). Indeed, such beliefs could be viewed as a form of negative or unhealthy perfectionism focused on emotional distress. Such beliefs have in turn been suggested to play a role in the development and maintenance of psychological and somatic symptoms (Surawy, Hackmann, Hawton, & Sharpe, 1995). Such beliefs are associated with attempts to suppress distressing emotions (Spoka, Luterek and Heimberg, 2009), which may result in an unintended increase in distress (Trinder & Salkovskis, 1994). However, no previous studies have investigated whether beliefs about the unacceptability of negative emotions may mediate the relationship between unhealthy perfectionism and distress.

Finally, whereas beliefs about the unacceptability of thoughts and emotions may be considered as “cognitive content”, our third facet of self-criticism pertains to the process of self-critical thinking (Verplanken, Friborg, Wang, Trafimow, & Woolf, 2007). Negative self-thinking as “mental habit” has been identified as a vulnerability factor with respect to

psychological distress such as low self-esteem, depression (Verplanken et al., 2007), and anxiety (Verplanken, 2012).

1.2 Protective processes in the relationship between perfectionism and distress

Research has also started exploring potentially helpful psychological processes, which may act as protective factors and decrease the possibility that unhealthy perfectionism will lead to distress. Mindfulness has recently been hypothesised as one such protective factor. This is described as a process of deliberately and non-judgementally attending to present moment experiences without distraction or reaction, even when they are unpleasant (Baer, 2003).

The concept has been formulated as both a dispositional characteristic and a skill that can be learned and practiced, and is associated with decreased distress (Short & Mazmanian, 2013). Lundh (2004) hypothesised that perfectionism becomes unhealthy when striving for high standards becomes a demand and individuals demonstrate an inability to accept things as they are at present, which is a core component of mindfulness. Furthermore, it has been argued that mindfulness may serve as a protective factor in the perfectionism-distress relationship by providing skills to interrupt repetitive unhelpful thinking patterns, such as rumination (Short & Mazmanian, 2013).

Argus and Thompson (2008) found that mindful awareness fully mediated the positive association between maladaptive perfectionism and depression severity in inpatients experiencing clinical depression. Furthermore, Short and Mazmanian (2013) found that rumination mediated the relationship between socially prescribed perfectionism and negative affect in students who were low in mindfulness but not those high in mindfulness.

However, mindfulness is often conceptualised as a multi-faceted construct, including observing one's ongoing experience, describing thoughts and feelings, acting with awareness rather than being easily distracted, non-judging and non-reactivity to distressing thoughts and feelings (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2003). Short and

Mazmanian (2003) found that acting with awareness rather than becoming distracted and non-judging of inner experience were most strongly related to distress. No previous studies have investigated different components of mindfulness as mediators in the unhealthy perfectionism-distress relationship.

Self-compassion is often viewed as a key component within mindfulness (Kuyken et al., 2010) but is gaining increasing research attention within its own right (Neff, 2003a, 2003b). Self-compassion has been found to predict emotional and cognitive reactions to negative everyday events and, when imagining distressing social events, buffer against negative self-feelings (Leary, Tate, Adams, Batts Allen, & Hancock, 2007). Although limited, existing research has found that self-compassion is associated with lower levels of psychological distress and rumination and that those students high in self-compassion show lower levels of perfectionism (Neff, 2003a). Self-compassion has not been previously investigated as a mediator in the relationship between unhealthy perfectionism and distress. In addition, the overlap between self-compassion and mindfulness means that it would be useful to examine these factors together to help us understand whether they make unique contributions in buffering the impact of perfectionism on distress.

1.3 The Present Study

In summary, previous studies suggest that unhealthy perfectionism is associated with higher levels of habitual self-critical thinking, rumination and unhelpful beliefs about emotions and lower levels of self-compassion and mindfulness. Each of these have been proposed as potential processes by which unhealthy perfectionism can contribute to psychological distress, although beliefs about emotions and self-compassion have not previously been investigated as potential mediators. However, these potential mediators are overlapping constructs. It could be argued that self-focused negatively evaluative cognition is a core aspect of habitual self-criticism, rumination and beliefs that negative emotions are unacceptable. Conversely, individuals high on self-compassion are likely to be lower on self-

criticism, although the constructs are not simply inverses of each other (Neff, 2003a). The construct of mindfulness is more complex, with some aspects of self-evaluative cognitions but other aspects that are more about observing, describing and non-reacting to experiences. In the present study, these different psychological processes were first entered into a factor analysis to identify underlying factors, before mediational analyses were undertaken. It is hypothesised that the key mediator between unhealthy perfectionism and distress would be negative thinking about the self. It was further hypothesised that the non-judging component of the mindfulness construct would load inversely on the self-critical thinking factor, while the other mindfulness components and self-compassion were included as potential independent protective factors.

2. Method

2.1 Design

A cross-sectional, questionnaire-based design was utilised. The study protocol obtained ethics approval from the Department of Psychology, University of Bath (Reference: 12-124).

2.2 Participants

An opportunity sample of participants were recruited ($n = 381$) via electronic online advertisements. These adverts were on sites providing information about psychological research studies and linked to the study information online. The age range for the sample was 18 – 68 years ($M = 27.92$; $SD = 11.11$). The sample was predominantly single (56.7%), female (79.5%), and from the USA or Canada (69.6%). The majority of participants were students, consisting of those at high-school (5.3%), and undergraduate (61.7%) or postgraduate (10.8%) study.

2.3 Measures

For each measure, higher ratings indicate higher levels of the specific construct.

Depression, Anxiety & Stress Scale (DASS-21) (Henry & Crawford, 2005)

Symptoms of anxiety, stress and depression were assessed using this 21-item scale, as has been utilised in previous studies of perfectionism (Steele & Wade, 2008; Steele et al., 2013). Participants are asked to rate how much they have experienced symptoms of these difficulties (e.g., feeling that life is meaningless) over the past week. The total of the sub-scales was used to indicate current level of psychological distress, as in previous studies (Steele et al., 2013).

Frost Multidimensional Perfectionism (FMPS) (Frost et al., 1990)

This 35-item questionnaire is a widely used reliable and valid measure of perfectionism (Frost et al., 1990). There are 6 subscales: Concern over Mistakes (CM) (e.g., 'I should be upset if I make a mistake'), Personal Standards (PS) (e.g., 'I set higher goals than most people'), Parental Expectations (PE) (e.g., 'My parents set very high standards for me'), Parental Criticism (PC) (e.g., 'As a child, I was punished for doing things less than perfect'), Doubts about Actions (DA) (e.g., 'It takes me a long time to do something "right"'), and Organisation (O) (e.g., 'Organisation is very important to me'), with the latter subscale excluded in scoring the total scale. In line with previous research (Stumpf & Parker, 2000) the FMPS was used to identify unhealthy perfectionism. Accordingly, the CM, DA, PE, and PC sub-scales were totalled to create the super-factor of unhealthy perfectionism.

Beliefs about Emotions Scale (BES) (Rimes & Chalder, 2010)

This 12-item scale assesses beliefs about the unacceptability of experiencing and expressing negative feelings and thoughts (e.g., 'It is a sign of weakness if I have miserable thoughts'). Higher scores indicate more unhelpful beliefs. A previous study found that the scale is reliable and valid (Rimes & Chalder, 2010).

Rumination Responses Questionnaire (RRQ) (Trapnell & Campbell, 1999)

This is a 12-item measure assessing levels of rumination (e.g., 'I tend to "ruminate" or dwell over things that happen to me for a really long time afterward'). Trapnell and Campbell (1999) report internal consistency coefficient estimates 0.90.

Habit Index of Negative Thinking (HINT) (Verplanken et al., 2007)

The HINT is a 12-item measure of habitual self-critical thinking (e.g., 'Thinking negatively about myself is something I do automatically'), with scores across the 12-items totalled.

Five-Facet Mindfulness Questionnaire (FFMQ) (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006)

This 39-item measure of mindfulness, developed based on a factor analytic study of five mindfulness questionnaires, is a reliable and valid scale (Baer et al., 2006). There are five factors: Observing (e.g., 'I pay attention to sensations, such as the wind in my hair or sun on my face'), Describing (e.g., 'I'm good at finding words to describe my feelings'), Acting with Awareness (e.g., 'I find it difficult to stay focused on what's happening in the present'), Non-Judging of Inner Experience (e.g., 'I tell myself I shouldn't be feeling the way I'm feeling') and Non-Reactivity to Inner Experience (e.g., 'I perceive my feelings and emotions without having to react to them'). Items on the describing, acting with awareness and non-judging of inner experience sub-scales are reverse scored.

Self-Compassion Scale (SCS-SF) – Short Form (Raes, Pommier, Neff & Van Gucht, 2011)

This 12-item scale assesses features of self-compassion (e.g., 'When I'm going through a very hard time, I give myself the caring and tenderness I need' and 'I'm disapproving and judgmental about my own flaws and inadequacies'). The scale demonstrates adequate reliability and validity (Neff, 2003a).

2.4. Procedure

This was an online study requiring participants to complete a consent form before accessing questionnaires. Questionnaires were completed in the participants' own time. At the end of the questionnaires, participants received the researcher's contact details for questions or comments. Participants were only included if they had completed the questionnaires.

2.5. Statistical analysis

In order to reveal underlying dimensions in the scales and subscales which were tested for mediation, as these showed a degree of overlap at face value, an exploratory principal components analysis was first utilised to identify underlying factors across them. An exploratory principal components analysis with all scales and their subscales was thus carried out on the BES, RRQ, HINT, SCS, and FFMQ subscales, using a varimax rotation. Before conducting this analysis, Kaiser-Meyer-Olkin (KMO) measure, Bartlett's test of sphericity and values in the correlation matrix and anti-image correlation matrix were examined to ascertain sampling adequacy (Dziuban & Shirkey, 1974; Kaiser & Rice, 1974). The resulting components were subsequently tested as mediators in the relationship between perfectionism and psychological distress.

Analyses of mediation effects used a bootstrapped multivariate procedure as suggested by Preacher and Hayes (2008). Mediation was investigated by directly testing significance of the indirect effects of the independent variable (IV) on the dependent variable (DV) through the mediator (M). This model also permits the inclusion of covariates. Within this approach, the results are based on 5000 bootstrapped samples and 95% confidence intervals were computed. The indirect effect is considered significant if the upper and lower bounds of the confidence intervals did not contain zero (Preacher & Hayes, 2008).

3. Results

3.1 Sample Characteristics

Mean scores and Cronbach's alpha across all measures are summarised in Table 1. Across all variables, there were no significant differences based on country or student / non-student status (all >0.05). Females scored significantly higher on the RRQ ($F(1, 379) = 4.011, p = .046$) and HINT ($F(1, 379) = 6.119, p = .014$), and males scored significantly higher on the FFMQ non-react ($F(1, 379) = 4.709, p = .031$), and SCS ($F(1, 379) = 6.593, p = .011$). Significant differences based on relationship status were also identified for FMPS unhealthy perfectionism ($F(1, 380) = 2.669, p = .031$), FFMQ describe ($F(1, 380) = 5.538, p = .000$), and FFMQ act with awareness ($F(1, 380) = 2.596, p = .036$). FMPS unhealthy perfectionism ($r = -.128, p = .013$), RRQ ($r = -.121, p = .018$), FFMQ describe ($r = .302, p = .000$), FFMQ act with awareness ($r = .192, p = .000$), FFMQ non-judge ($r = .194, p = .000$), and SCS ($r = 1.110, p = .017$) were significantly correlated with age. Therefore, gender, relationship status and age were controlled for as covariates in subsequent regression analyses.

3.2 Factor Analysis

The correlation matrix indicated that there were significant correlations between the majority of variables, and that there were no correlation coefficients greater than 0.9 (Field, 2009). KMO was greater than 0.8, Bartlett's test was highly significant ($p < .001$), and the diagonals of the anti-image correlation matrix were all > 0.5 (Field, 2009), supporting the inclusion of each item in the factor analysis.

Examining eigenvalues > 1 and inspecting the scree plot suggested a two-factor solution. These two factors accounted for 60.18% of the variance and converged in three iterations. The factor loadings (>0.5) for this solution are shown in Table 2.

Six of the variables loaded onto factor one (see Table 2). These items reflect aspects of self-critical thinking, with the highest loading being on the non-judge subscale of the FFMQ; therefore this factor was labelled "self-criticism". Three variables loaded onto a second factor related to awareness of ongoing experiences, observing internal experiences without

reacting and describing experiences in words, with the highest loading being on the observe subscale of the FFMQ. This factor was labelled “present-moment awareness”. Composite scores were created for each of the factors, utilising the regression method. For the new derived self-criticism factor, the direction was reversed, so that higher scores indicate higher levels of self-criticism, to bring it in line with the other variables in which higher scores indicate higher levels of the construct in question.

3.3 Correlational findings

Correlations between psychological distress, unhealthy perfectionism, and the two previously identified factors (self-criticism and present-moment awareness) are summarised in Table 3. As there were significant differences for some variables for gender, relationship status and age, all correlations presented are partial correlations controlled for these variables. Unhealthy perfectionism correlated significantly with psychological distress as expected. Self-criticism showed significant correlation with both psychological distress and unhealthy perfectionism. Present-moment awareness showed significant negative correlations with unhealthy perfectionism, but was not significantly associated with psychological distress. As present-moment awareness did not significantly correlate with psychological distress this factor was excluded from subsequent analyses.

3.4 Mediation analyses

The identified factor ‘self-criticism’ was entered into a mediation model to test the hypothesis that this would be a significant mediator of the relationship between unhealthy perfectionism and distress. Results are summarised in Figure 1 below.

In the mediation model, total effects indicated significant relations between unhealthy perfectionism and psychological distress. Self-criticism significantly mediated the relationship between unhealthy perfectionism and psychological distress, as indicated by the confidence intervals for the indirect effects not including zero. Despite this significant mediation, the

direct effects remained significant suggesting that self-criticism factor partially mediated the relationship between unhealthy perfectionism and psychological distress.

4. Discussion

The current study investigated potential mediating effects of constructs that represent cognitive processes in the relationship between unhealthy perfectionism and psychological distress. By exploring rumination, self-criticism, perfectionist beliefs about thoughts and emotions, mindfulness and self-compassion simultaneously, it was possible to investigate the relative contributions of roles of these overlapping constructs. Factor analysis identified two underlying, independent factors which were labelled self-criticism and present-moment awareness. Self-criticism (but not present-moment awareness) was associated with psychological distress and unhealthy perfectionism, and was found to partially mediate this relationship.

The factor labelled 'self-criticism' was composed of measures of judgemental, self-critical, and ruminative critical cognitive responses to thoughts, emotions or other aspects of the self or one's experiences. This factor included the mindfulness components of non-judging and acting with awareness rather than becoming distracted by one's thought (both reverse loaded). Acting with awareness is likely to be negatively associated with self-critical thinking because the latter is cognitively-demanding, thus distracting and interfering with ongoing awareness. Self-compassion also loaded inversely onto the self-criticism factor so there was no evidence that self-compassion acts as an independent protective factor in the relationship between unhealthy perfectionism and distress. Finding self-criticism was a mediator between unhealthy perfectionism and distress is consistent with previous studies about self-criticism and rumination as mediators of this relationship (e.g. Dunkley et al., 2006) using different measures of perfectionism or distress. By using a range of measures simultaneously, the

present study findings highlight that there may be one underlying construct of repetitive or habitual self-critical processing that is tapped into.

Interventions supporting perfectionist individuals to reduce repetitive, self-judgemental thinking may help reduce psychological distress. The current findings would also support the use of interventions that target an increase in self-compassion, non-judgement and awareness of the present moment, rather than becoming distracted by one's thoughts. There are already successful cognitive behavioural and mindfulness-based interventions focused on reducing rumination and increasing self-compassion and present-moment awareness (e.g. Watkins et al., 2011; Kuyken, et al., 2010). The adaptation of such approaches for a perfectionist student population, perhaps as a form of early intervention, could be addressed in future research. Indeed, these results are consistent with a pilot study comparing mindfulness-based cognitive therapy for unhealthy perfectionism with self-help, which found that self-compassion mediated the group differences in perfectionism after treatment (James & Rimes, in preparation).

Another aspect of mindfulness, the present-moment observation, describing and non-reactivity to ongoing experience, was identified as a second underlying construct. This was significantly correlated with unhealthy perfectionism but not with distress. The present findings may indicate that if mindfulness interventions are used with perfectionist individuals, the self-compassion components may be more important than training people to improve their skills in observing, describing and non-reacting to their moment-by-moment experience.

Although these findings suggest that the factor of self-criticism is an important mediator, it also needs to be considered that this construct was only a partial mediator. This suggests that other factors not assessed in the present study are likely to play a role in this relationship and therefore future experimental research should continue to explore alternative processes.

4.1 Limitations

The current study was cross-sectional in nature; therefore, no conclusions about the causal relationships between unhealthy perfectionism, self-criticism, present-moment awareness and psychological distress can be drawn, and mediation thus concerned statistical mediation only. The study relied on self-report measurement, and included a sample of predominantly white, and college aged females, and the results may not be generalizable to other populations. In addition, the precise circumstances under which participants completed the online questionnaires may have influenced their responses. Distress as measured by the Depression, Anxiety and Stress Scale was higher in this sample than a previous general population sample (Antony et al., 1998) and the findings require replication in both less distressed general population samples and also clinical and more culturally diverse populations. Furthermore, including measures with alphas in the range 0.70 - 0.80 could lead to questions about the reliability of some measures utilised, so further investigation is also important for this reason.

4.2 Conclusions

In conclusion, this study suggests that the unhealthy perfectionism – distress relationship is mediated by higher levels of self-critical thinking. This has implications for developing or refining interventions for people for whom perfectionism is causing difficulties.

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Table 1.

Means (with standard deviations) for all study variables.

	Mean	SD	Range	Alpha
Depression, Anxiety, Stress Scale	40.17	26.37	0 - 116	0.86
Unhealthy Perfectionism	61.43	16.73	22 - 108	0.71
Beliefs about Emotions Scale	39.91	14.49	5 - 72	0.89
Rumination Responses Questionnaire	32.72	9.97	0 - 48	0.92
Habit Index of Negative Thinking	38.62	14.12	12 - 60	0.96
FFMQ Observe	25.70	5.75	8 - 40	0.76
FFMQ Describe	25.98	7.14	8 – 40	0.90
FFMQ Act with awareness	24.50	6.50	8 – 40	0.89
FFMQ Non-judge	23.40	7.32	8 – 40	0.90
FFMQ Non-react	19.94	4.81	7 – 34	0.79
Self-Compassion Scale	2.80	0.73	1 - 4.83	0.85

Table 2.

Factor Loadings for Two Factor Solution

Measures	Factor Loading	
	1	2
<i>Self-Criticism</i>		
FFMQ Non-judge	0.819	
HINT	-0.809	
SCS Total	0.798	
Rumination	-0.752	
BES	-0.699	
FFMQ Act with Awareness	0.636	
<i>Present-moment Awareness</i>		
FFMQ Observe		0.824
FFMQ Non-react		0.760
FFMQ Describe		0.523

Table 3.

Partial correlations (controlling for gender, relationship status and age) between psychological distress, unhealthy perfectionism, self-criticism, and present-moment awareness.¹

Partial correlation coefficients	FMPS Unhealthy Perfectionism	DASS	Self-criticism	Present-moment awareness
FMPS				
Unhealthy Perfectionism	-			
DASS	0.56***	-		
Self-criticism	0.63***	0.66***	-	
Present-moment awareness	-0.14**	-0.09	-0.03	-

***Correlation is significant at 0.01 level.*

****Correlation is significant at 0.001 level.*

¹ Higher scores indicate higher levels of constructs.

Figure 1 on next page

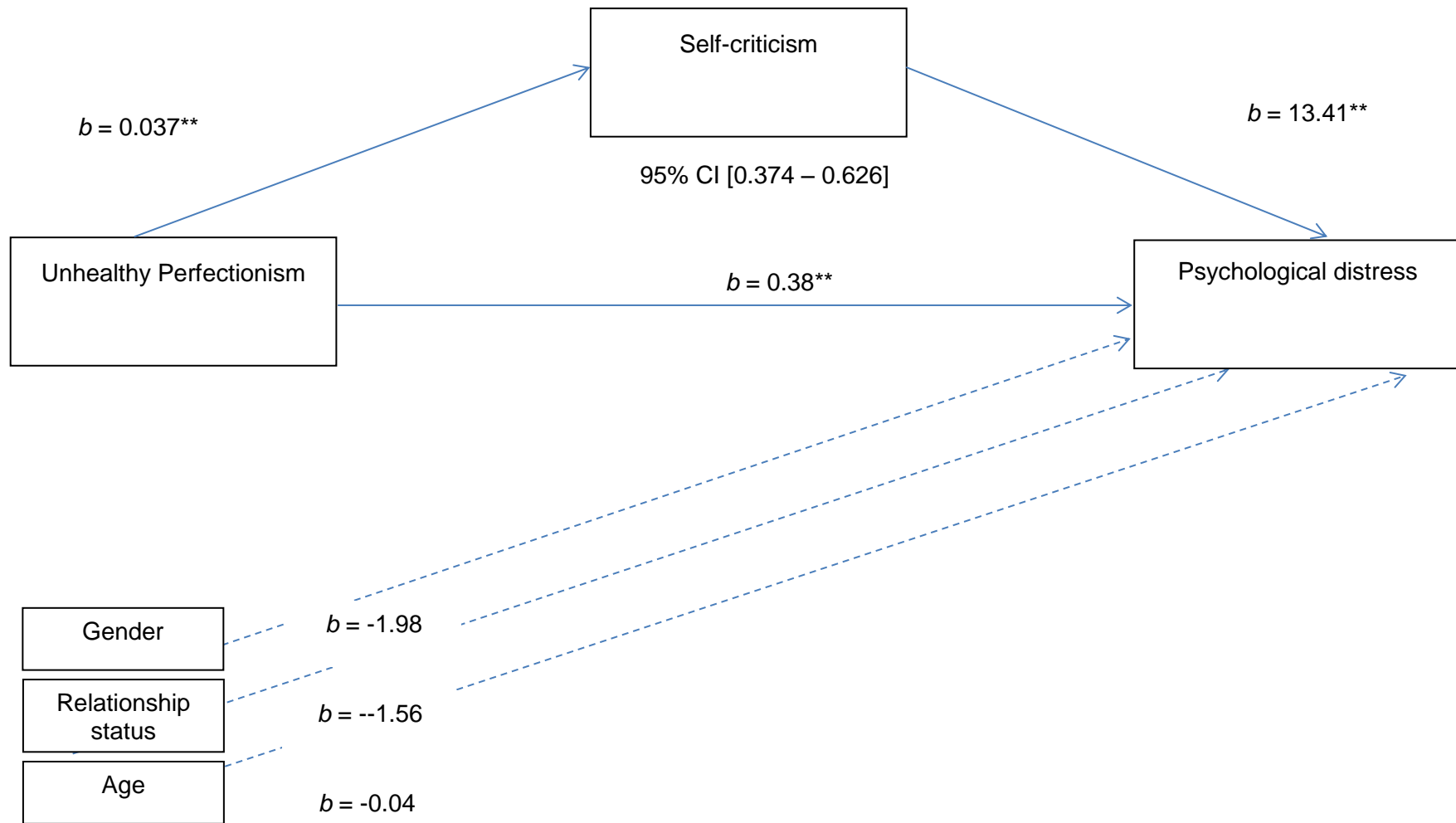


Figure 1. Indirect effects of self-criticism on the relationship between unhealthy perfectionism and psychological distress (controlling for gender, relationship status and age). CI = Confidence Interval. $^{**}p < .0$